

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-04

☐

Other

☒

Amendment Number

000001

Contract Number

EP-D-11-006

Contract Period 04/29/2011 to 03/31/2015

Base

Option Period Number 3

Title of Work Assignment/SF Site Name

Characterization of ICI Boiler

Contractor

EASTERN RESEARCH GROUP, INC.

Specify Section and paragraph of Contract SOW

Purpose

☐

Work Assignment

☐

Work Assignment Close-Out

☒

Work Assignment Amendment

☐

Incremental Funding

☐

Work Plan Approval

Period of Performance

From 04/01/2014 To 04/30/2014

Comments

This work change amends the period of performance of the WA to end 04/30/14. Also, the contractor shall only submit a cost estimate for completing a final report to summarize the approach and results of task 2. This document is IAW the OPM 7.3.5.1(D)

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Superfund

Accounting and Appropriations Data

☒

Non-Superfund

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

SFO

(Max 2)

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#	DCN (Max 6)	Budget FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period

Cost/Fee

LOE

04/29/2011 to 03/31/2015

This Action

Total

Work Plan / Cost Estimate Approvals

Contractor W/P Dated

Cost/Fee

LOE

Cumulative Approved

Cost/Fee

LOE

Work Assignment Manager Name Tim Smith

Branch/Mail Code

Phone Number 919-541-4718

FAX Number

(Signature)

(Date)

Project Officer Name Margaret Dougherty

Branch/Mail Code

Phone Number 919-541-2344

FAX Number

(Signature)

(Date)

Other Agency Official Name

Branch/Mail Code

Phone Number

FAX Number

(Signature)

(Date)

Contracting Official Name Rodney Daryl Jones

Branch/Mail Code

Phone Number 919-541-3112

FAX Number

(Signature)

APR 17 2014

(Date)

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-04

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Other

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Contract Number

EP-D-11-006

Contract Period 04/29/2011 To 03/31/2015

Base

Option Period Number 3

Title of Work Assignment/SF Site Name

Characterization of ICI Boiler

Contractor

EASTERN RESEARCH GROUP, INC.

Specify Section and paragraph of Contract SOW

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Purpose

☒

Work Assignment

☐

Work Assignment Close-Out

☐

Work Assignment Amendment

☐

Incremental Funding

☐

Work Plan Approval

Period of Performance

From 04/01/2014 To 03/31/2015

Comments

This work assignment includes 200 hours for preparation of the work plan and to begin work on the work assignment.
This document is IAW the OWM 7.3.5.1(D)☐

Superfund

Accounting and Appropriations Data

☒

Non-Superfund

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

SFO
(Max 2)☐

g	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period

Cost/Fee

LOE

04/29/2011 To 03/31/2015

This Action

Total

Work Plan / Cost Estimate Approvals

Contractor W/P Dated

Cost/Fee

LOE

Cumulative Approved

Cost/Fee

LOE

Work Assignment Manager Name Tim Smith

(Signature)

(Date)

Branch/Mail Code:

Phone Number 919-541-4718

FAX Number:

Project Officer Name Karen C. Watson

(Signature)

(Date)

Branch/Mail Code:

Phone Number 919-541-3114

FAX Number:

Other Agency Official Name

(Signature)

(Date)

Branch/Mail Code:

Phone Number:

FAX Number:

Contracting Official Name Rodney-Daryl Jones

(Signature)

(Date) MAR 25 2011

Branch/Mail Code:

Phone Number 919-541-3112

FAX Number:

Statement of Work

- I. **Title:** Characterization of ICI Boiler NO_x Controls
Contractor Name: ERG
Contract #: EP-D-11-006
WAM: Tim Smith, 919-541-4718
Alt WAM: David Misenheimer, 919-541-5473
WA #: 4-04

- II. **Background:** When developing regulations, EPA uses control measure information to assess the effectiveness of various control options and to estimate the potential costs. EPA is currently involved in a rulemaking effort addressing transported ozone under the "good neighbor" provision, section 110(a)(2)(D)(i) of the Clean Air Act, for the eastern half of the United States. For this rulemaking, we need to develop best available estimates of control costs and available reductions to inform the identification of upwind states' "significant contribution" to downwind nonattainment.

The purpose of this Work Assignment (WA) is to conduct a control strategy analysis of the potential application of NO_x controls to Industrial / Commercial / Institutional (ICI) Boilers in the eastern U.S. and to estimate the resulting emissions reductions and costs. The goal of this work assignment is to ensure the overall credibility of current emissions reduction estimates and cost estimates associated with these reductions. In addition, this WA includes a sensitivity analysis of the conversion of a portion of coal and oil fired boilers to natural gas and the impact such a conversion would have on the results of the control strategy analysis.

III. Description and Tasks:

Task #1: Work Plan

The Contractor shall develop a new work plan. The Contractor shall hold conference calls with the WAM on at least a biweekly basis after approval of the work plan to plan and review progress of this WA.

Task #2: Estimate Emission Reductions and Costs that would result from ICI Boiler Controls being applied in 37 Eastern States

The WAM will provide the Contractor with a dataset of the latest NEI emissions information for the 37 Eastern States. The Contractor will apply ICI Boiler NO_x control and cost equations and methods developed by ERG under a previous Work Assignment (Contract EPD11006, W.A. 3-15 "Characterization of ICI Boiler Control Measures") to the NEI dataset to prepare a "control strategy" emission inventory.

The Contractor will identify sources with existing controls that are not reflected in the cost calculations (for which costs would likely be underestimated, and emissions reductions overestimated). To identify such sources, the Contractor will review available information such as the ICI boiler MACT ICR data base, state permits, continuous monitoring data

reported to EPA or states, whether sources are located in nonattainment counties with NO_x rules, and other readily available information. Where sources are known to have or are likely to have existing controls already in place, the Contractor will revise the control strategy results to remove controls applied by CoST to such sources.

The Contractor will also review the results to identify likely erroneous emission reductions or costs based on the Contractor's knowledge of emission reductions and costs expected for various types and sizes of ICI Boilers and will modify the control strategy results to correct any such erroneous emission reductions or costs.

The Contractor will prioritize the efforts described above on boiler sizes and types that are the greatest contributors to the overall NO_x emissions inventory, and on boiler sizes and types that have the greatest likelihood for cost-effective controls.

The Contractor will also address whether it is feasible and useful to calculate the NO_x lb/MMBTU for boilers by using combined information from the NEI and from greenhouse gas reporting program data.

Deliverables Under Task 2

- 2a Control Strategy dataset of source by source application of controls and resulting emission reductions and costs, based on the latest National Emissions Inventory (NEI) reflecting corrections described above.
- 2b Documentation of the methodology and inputs used to prepare the control strategy dataset, issues encountered, and resolution of issues.
- 2c Recommended corrections to ICI Boiler NO_x emissions information in the control strategy prepared in Task 2 which could be solicited by EPA from commenters on the Transport Rule.

Task #3: Prepare Base Case Sensitivity Analysis of Conversion of a Portion of Coal and Oil Fired ICI Boilers to Natural Gas

The WAM will provide the Contractor with pertinent studies identifying the portion of boilers for which it would be less costly to switch to natural gas from current fuels such as coal or residual oil, as compared to compliance with the ICI boiler MACT. The Contractor shall use the information to conduct a sensitivity analysis of the effects of such fuel switching on NO_x emissions. The sensitivity analysis will estimate the 2018 base case emissions reductions that would occur if (1) all such sources switched fuels and (2) a more moderate fraction of such sources switched fuels. The sensitivity analysis results will be estimated for the 37 Eastern States as a whole and also by individual States. In addition, the Contractor shall also report if readily available the effects of such fuel switching on other pollutant emissions from ICI boilers, such as SO₂, PM_{2.5}, Hg, and CO₂.

Deliverables Under Task 3

- 3a Documentation of the procedures used in the conduct of this analysis
- 3b Dataset of ICI Boiler NOx emissions resulting from the sensitivity analysis, summarized by State for the 37 Eastern States
- 3c State by state summary of the impact the conversion would have on the control strategy prepared in Task 2

IV. QA Requirements:

To identify and eliminate errors introduced during data preparation, the Contractor shall perform quality control (QC) of the data prior to delivering data sets to the WAM. The Contractor shall include a statement in the final report that confirms that the data is appropriate for the intended use. Also, the Contractor shall identify in the final report the sources of the data, any existing quality assurance (QA) information about the data (i.e., QA that was performed at the time the data were originally prepared), and the location of the QA information.

V. Reporting Requirements:

The Contractor shall provide monthly progress reports in accordance with the terms of the contract. The Contractor shall submit work products in electronic as well as hard copy form. In addition, the Contractor shall deliver to the WAM each draft and final report in electronic format that is readable by windows-based word-processing (Microsoft Word 2007), graphics (Microsoft PowerPoint 2007), and spreadsheet (Excel 2007) programs. The Contractor shall also provide electronic copies of reports in PDF format. The Contractor shall provide the datasets in Excel 2007 or Access 2007 format, to be decided in consultation with the WAM. The Contractor shall ensure that all electronic work products are free of computer viruses, malware, or spyware.